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OFFICE OF PUBLIC HEALTH • Center for Health Policy, Information & Promotion

Bioterrorism Information for Medical Professionals

FAQ's -Medical Facts About Anthrax

What are the signs and symptoms of anthrax?

Bacillus anthracis, the etiologic agent of anthrax, is a large, gram-positive, non-motile, spore-forming bacterial rod. The three virulence factors of *B. anthracis* are edema toxin, lethal toxin and a capsular antigen. Human anthrax has three major clinical forms: cutaneous, inhalation, and gastrointestinal. If left untreated, anthrax in all forms can lead to septicemia and death.

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within 7 days.

Cutaneous anthrax is the most common naturally occurring type of infection (>95%) and usually occurs after skin contact with contaminated meat, wool, hides, or leather from infected animals. The incubation period ranges from 1-12 days. The skin infection begins as a small papule, progresses to a vesicle in 1-2 days followed by a necrotic ulcer. The lesion is usually painless, but patients also may have fever, malaise, headache, and regional lymphadenopathy. Most (about 95%) anthrax infections occur when the bacterium enters a cut or abrasion on the skin. Skin infection begins as a raised bump that resembles a spider bite, but (within 1-2 days) it develops into a vesicle and then a painless ulcer, usually 1-3 cm in diameter, with a characteristic black necrotic (dying) area in the center. Lymph glands in the adjacent area may swell. About 20% of untreated cases of cutaneous anthrax will result in death. Deaths are rare if patients are given appropriate antimicrobial therapy.

Inhalational anthrax is the most lethal form of anthrax. Anthrax spores must be aerosolized in order to cause inhalational anthrax. The number of spores that cause human infection is unknown. The incubation period of inhalational anthrax among humans is unclear, but it is reported to range from 1 to 7 days, possibly ranging up to 60 days. It resembles a viral respiratory illness and initial symptoms include sore throat, mild fever, muscle aches and malaise. These symptoms may progress to respiratory failure and shock with meningitis frequently developing.

Gastrointestinal anthrax usually follows the consumption of raw or undercooked contaminated meat and has an incubation period of 1-7 days. It is associated with severe abdominal distress followed by fever and signs of septicemia. The disease can take an oropharyngeal or abdominal form. Involvement of the pharynx is usually characterized by lesions at the base of the tongue, sore throat, dysphagia, fever, and regional lymphadenopathy. Lower bowel inflammation usually causes nausea, loss of appetite, vomiting and fever, followed by abdominal pain, vomiting blood, and bloody diarrhea.

What is the case definition for anthrax?

A confirmed case of anthrax is defined as a clinically compatible case of cutaneous, inhalational, or gastrointestinal illness that is laboratory confirmed by isolation of *B. anthracis* from an affected tissue or site, or laboratory evidence of *B. anthracis* infection based on at least two supportive laboratory tests.

General and Diagnostic

Fact Sheet: Anthrax Information for Health Care Providers

<http://www.bt.cdc.gov/Agent/anthrax/anthrax-hcp-factsheet.asp>

Technical Information About Anthrax

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/anthrax_t.htm

Clinical and Epidemiologic Principles of Anthrax

<http://www.cdc.gov/ncidod/EID/vol5no4/cieslak.htm>

Patient Care Information

Doxycycline

<http://www.bt.cdc.gov/documentsapp/Anthrax/10312001/doxy.asp>

Penicillin

<http://www.bt.cdc.gov/documentsapp/Anthrax/PatientInfoPenicillin/PatientInfoPenicillin.asp>

Amoxicillin

<http://www.bt.cdc.gov/documentsapp/Anthrax/PatientInfoAmoxicillin/PatientInfoAmoxicillin.asp>

Treatment Options for Postal and Other Workers Exposed to Anthrax

<http://www.bt.cdc.gov/Agent/anthrax/PostalWorkers12212001.asp>

Update on Options for Preventive Treatment for Persons at Risk for Inhalational Anthrax

<http://www.bt.cdc.gov/Agent/anthrax/PreventiveTreatment12212001.asp>

Use of Anthrax Vaccine in the United States, ACIP Recommendations

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4915a1.htm>

Department of Defense Anthrax Vaccine Immunization Program

<http://www.anthrax.osd.mil/>

On the Department of Defense Web site

Exposure Management/Prophylaxis

Antimicrobial Postexposure Prophylaxis for Anthrax: Adverse Events and Adherence

<http://www.cdc.gov/ncidod/EID/vol8no10/02-0349.htm>

Anthrax Postexposure Prophylaxis in Postal Workers, Connecticut, 2001

<http://www.cdc.gov/ncidod/EID/vol8no10/02-0346.htm>

Adherence to Antimicrobial Inhalational Anthrax Prophylaxis among Postal Workers, Washington, D.C., 2001

<http://www.cdc.gov/ncidod/eid/vol8no10/02-0331.htm>

Clinical Issues in the Prophylaxis, Diagnosis, and Treatment of Anthrax

<http://www.cdc.gov/ncidod/EID/vol8no2/01-0521.htm>

Notice to Readers: Evaluation of Postexposure Antibiotic Prophylaxis to Prevent Anthrax

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5103a4.htm>

Update on Options for Preventive Treatment for Persons at Risk for Inhalational Anthrax

<http://www.bt.cdc.gov/Agent/anthrax/PreventiveTreatment12212001.asp>

[Update on Options for Preventive Treatment for Persons at Risk for Inhalational Anthrax](http://www.bt.cdc.gov/Agent/anthrax/PreventiveTreatment12212001.asp)
<http://www.bt.cdc.gov/Agent/anthrax/PreventiveTreatment12212001.asp>

[Antimicrobial Prophylaxis to Prevent Anthrax Among Decontamination/Cleanup Workers Responding to an Intentional Distribution of Bacillus anthracis](http://www.bt.cdc.gov/documentsapp/Anthrax/AntiPropV.asp)
<http://www.bt.cdc.gov/documentsapp/Anthrax/AntiPropV.asp>

[Statement by the Department of Health and Human Services Regarding Additional Options for Preventive Treatment For Those Exposed to Inhalational Anthrax](http://www.bt.cdc.gov/documentsapp/Anthrax/12182001/hhs12182001.asp)
<http://www.bt.cdc.gov/documentsapp/Anthrax/12182001/hhs12182001.asp>

[Adverse Events Associated with Anthrax Prophylaxis Among Postal Employees BB New Jersey, New York City, and the District of Columbia Metropolitan Area, 2001](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5047a2.htm)
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5047a2.htm>